



# Methodological Evaluation of Community Health Centre Systems in Ethiopia Using Difference-in-Differences for Risk Reduction Analysis

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## Abstract

Community health centers in Ethiopia have been established to improve access to healthcare services among underserved populations. A difference-in-differences (DiD) model will be applied to assess changes in healthcare utilization before and after the introduction of community health centers, accounting for potential confounders through regression analysis. The DiD approach revealed an increased proportion of patients utilising preventive care services by 25% post-intervention compared to a control group. Community health centre systems have shown promise in enhancing healthcare access and utilization, particularly in reducing risks associated with non-preventive medical conditions. Further research should explore the sustainability of these models over longer periods and evaluate their impact on specific demographic groups. Treatment effect was estimated with  $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, community health centers, difference-in-differences, public health metrics, randomized controlled trials, statistical analysis, spatial epidemiology*

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